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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,503	01/13/2006	Yasuhiro Kabu	284585US0PCT	8831
22850	7590	11/12/2008	EXAMINER	
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			WEISZ, DAVID G	
			ART UNIT	PAPER NUMBER
			4153	
			NOTIFICATION DATE	DELIVERY MODE
			11/12/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/564,503	Applicant(s) KABU ET AL.	
	Examiner DAVID WEISZ	Art Unit 4153	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20060113</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claim 6 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The limitation "program" is recited in line 1 of claim 6. Computer programs are non-statutory subject matter unless the program is on a computer-readable medium.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Bockel-Macal et al. (US 2001/0009773).

Regarding claim 1, Bockel-Macal discloses a method for supplying reaction gases in a catalytic gas-phase oxidation reaction in which at least a material to be oxidized and a gas containing molecular oxygen are mixed and the resultant mixture is supplied to a catalytic gas-phase oxidation reactor (**Figure 3A and [0144]**), characterized in that, a feed rate of the material to be oxidized and a feed rate of the gas containing molecular oxygen **[0144]** are adjusted so that when a composition of a

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gas at the inlet of the catalytic gas-phase oxidation reactor is changed from a composition A point represented by plotting a concentration of the material to be oxidized and a concentration of oxygen in the gas at said inlet to a composition B point, compositions on the way of the change from the composition A point to the composition B point fall outside the explosion range (**Figure 3B**).

Regarding claim 2, Bockel-Macal discloses all of the claim limitations as set forth above. Additionally, the reference discloses the method for supplying reaction gases wherein one of the feed rates **[0144]** of the material to be oxidized and the gas containing molecular oxygen is adjusted in advance by increasing it or decreasing it to the direction away from the explosion range and then the other feed rate is adjusted by increasing it or decreasing it to reach the composition B point so that the compositions on the way of the change from the composition A point to the composition B point fall outside the explosion range (**Figure 3B**).

Regarding claim 3, Bockel-Macal discloses all of the claim limitations as set forth above. Additionally, the reference discloses the method for supplying reaction gases wherein in the case there exists the composition C point of the lowest oxygen concentration of an explosion limit in the explosion range (**Figure 3B**), a feed rate of the material to be oxidized and a feed rate of the gas containing molecular oxygen are adjusted so that compositions on the way of the change from the composition A point to the composition B **[0144]** point pass through the composition C' point (**Figure 3B**).

Regarding claim 4, Bockel-Macal discloses all of the claim limitations as set forth above. Additionally, the reference discloses the method for supplying reaction gases

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wherein the range in which the material to be oxidized and oxygen possibly react to cause explosion (the explosion range) and a present compositional point represented by plotting concentrations **[0165]** of the material to be oxidized and oxygen in the gas at the inlet of the catalytic gas-phase oxidation reactor are shown and monitored on a display **[0187]**.

Regarding claim 6, Bockel-Macal discloses a program **[0193]** which makes a computer function as a means for showing on a display **[0187]** a compositional range which, in the case at least a material to be oxidized and a gas containing molecular oxygen are mixed, possibly reacts to cause an explosion (an explosion range) **[0193]**, and as a means for showing on the display a compositional point which is represented by plotting the measured values of concentration of the material to be oxidized and oxygen in a gas at the inlet of a catalytic gas-phase oxidation reactor as well as the explosion range **([0187] and Figure 9A)**.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

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2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bockel-Macal et al. (US 2001/0009773) as applied to claims 1-4 and 6 above, and further in view of Abe et al. (US 4,954,650).

Regarding claim 5, Bockel-Macal discloses all the claim limitations as set forth above. However, the reference does not disclose a method for supplying reaction gases wherein the material to be oxidized is isobutylene, tertiary butyl alcohol or methacrolein.

Abe et al. discloses catalytic vapor-phase oxidation wherein the material to be oxidized is isobutylene and/or tertiary butanol (**see “isobutylene and/or tertiary butanol Col1/L7-9)**. Additionally, Abe et al. discloses the use of isobutylene or tertiary butanol to be economically advantageous (**see “economically advantageous” Col3/L29-33)**).

Bockel-Macal et al. and Abe et al. are analogous because both references are directed to two-step catalytic vapor-phase oxidation reactions.

It would have been obvious to one having ordinary skill in the art at the time of the invention to use isobutylene or tertiary butanol as the material to be oxidized in the method of Bockel-Macal because using isobutylene or tertiary butanol is economically advantageous.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

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the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID WEISZ whose telephone number is (571)270-7073. The examiner can normally be reached on Monday - Thursday, 7:30 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Basia Ridley can be reached on (571)-272-1453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tony G Soohoo/
Primary Examiner, Art Unit 1797
AU 4153 TA

/D. W./
Examiner, Art Unit 4153